

In the claims:

Please amend claims 13-24 as follows:

13. (Once Amended) A process for writing a Bragg grating in a transparent substrate, the Bragg grating forming a spectral filter with regard to a light wave that passes through it, the process comprising:

generating an interference pattern between two light beams with the same wavelength and coherent with each other but with angular offset; and

writing said interference pattern to the substrate, in the form of a modulation of the refraction index of the transparent substrate, with a phase plate having an adjustable position and orientation,

wherein said phase plate divides at least one of said light beams into at least two sub-beams, creates a phase shift between said at least two sub-beams, and generates a corresponding phase shift in the Bragg grating.

14. (Once Amended) The process according to claim 13, wherein said writing further comprises using an amplitude separation configuration.

15. (Once Amended) The process according to claim 13, wherein said writing further comprises using a wave front separation configuration.

16. (Once Amended) The process according to claim 13, wherein the position of said phase shift or the value of said phase shift or the position and value of said phase shift in the light beam formed by said at least two sub-beams, is modified with time.

17. (Once Amended) An apparatus for writing a Bragg grating in a substrate, said apparatus comprising:

at least one phase plate capable of creating a phase shift between at least two sub-beams; and

means for adjusting the position of said phase plate said means for adjusting having at least two degrees of freedom, one being angular degree of freedom provided for adjustment of the value of the phase shift, and the other being a translation degree of freedom provided for adjustment of the position of the phase shift in the light beam formed by the two sub-beams.

18. (Once Amended) An apparatus according to claim 17 further comprising interferometric means with two or three mirrors for transferring the interference pattern according to an amplitude separation configuration, said interferometric means coupled to said means for adjusting.

19. (Once Amended) An apparatus according to claim 17 further comprising interferometric means with a prism for transferring the interference pattern according to a wave front separation configuration, said interferometric means coupled to said means for adjusting.

20. (Once Amended) The process according to claim 13, wherein the phase shift between said at least two sub-beams is substantially equal to π .

21. (Once Amended) The process according to claim 13, further comprising:

writing said interference pattern in the substrate with a phase plate, wherein the substrate includes a pre-written identical Bragg grating, at the same position, with a phase change of over the entire length of the prewritten grating, to erase all or some of the pre-written grating in order to obtain a given reflection coefficient.

22. (Once Amended) The process according to claim 13 further comprising:

forming a Fabry-Perot cavity delimited by two Bragg gratings at different positions in space.

23. (Once Amended) The process according to claim 13 further comprising:

forming a Bragg grating with a determined index modulation envelope by successively writing two Bragg gratings comprising parts in phase opposition, the time taken to overwrite one Bragg grating by the other being variable, the position of the phase shift being variable and the value of the phase shift being variable.

24. (Once Amended) The process according to claim 23, wherein the position of the phase shift is being displaced by a programmable movement.

Please add new claims 25-27 as follows:

25. (New) The process according to claim 13, wherein said light guide is an optical fiber.

26. (New) The process according to claim 23, wherein the Bragg grading is an apodized Bragg grading.

27. (New) An apparatus according to claim 17 further comprising interferometric means with a Lloyd folded mirror for transferring the interference pattern according to a wave front separation configuration.